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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,997	11/03/2003	Mark Levine	930009-2015	5362

20999 7590 10/14/2005

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EXAMINER	
PIZIALI, ANDREW T	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,997	LEVINE ET AL.	
	Examiner	Art Unit	
	Andrew T. Piziali	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-40* is/are pending in the application.

4a) Of the above claim(s) *5,6,25 and 26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-17,19-24 and 27-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/3/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 9/16/2005 has been entered. The examiner has withdrawn the 35 USC 112 rejections of claims 12, 18 and 32 based on the cancellation of claim 18 and the amendments to claims 12 and 32. Applicant's amendment necessitated the new grounds of rejection presented in this Office action.

Election/Restrictions

2. Applicant's election without traverse of Species 3, claims 1-4, 7-24 and 27-38 in the reply filed on 9/16/2005 is acknowledged. Claims 5, 6, 25 and 26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 7-8, 11-16, 19-22, 24, 27-28, 31-36 and 39-40 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 6,432,850 to Takagi et al (hereinafter referred to as Takagi).

Regarding claims 1-4, 7-8, 11-16, 19-22, 24, 27-28, 31-36 and 39-40, Takagi discloses a conductive fabric comprising a plurality of polymeric filaments having one or more C-shaped grooves formed therein, wherein each filament includes electrically conductive polymer material incorporated as a coating (see entire document including column 1, lines 6-10, column 3, lines 53-64, column 4, lines 8-21 and Figure 1). Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11), therefore, the fabric can at least be compared to a metal-based fabric in terms of conductivity. Considering that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to be resistant to dents and creases.

Regarding the fabric being an industrial fabric, Takagi may not specifically mention using the fabric in industrial applications, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as an industrial fabric (see applicant's definition of "industrial fabric" on page 9 of the response filed on 9/16/2005). It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, Takagi discloses that the filaments may constitute between thirty and one hundred percent of the fabric (column 3, lines 34-39).

Regarding claims 3-4, considering that Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11) and that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to

have static dissipation properties equivalent to metal-based fabrics while also having physical properties (modulus, tenacity, strength, adhesion, abrasion resistance, and/or durability) comparable to non-conductive synthetic fabrics.

Regarding claims 7-8 and 27-28, Takagi discloses that the filament may have an oriented structure coated with conductive polymer material (column 4, lines 16-21 and Figure 1).

Regarding claims 8 and 28, Takagi discloses that the fibers may be formed by bicomponent spinning, but Takagi does not specifically mention the claimed method of applying conductive polymer. Considering that substantially identical structure illustrated in Figure 1 of Takagi compared to Figure 1 of the current application, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show obvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Regarding claims 11-16, 31-36 and 39-40, Takagi discloses that the filament may be lobed monofilament coated with conductive polymer material (see Figure 1).

Regarding claims 12, 32 and 39-40, Takagi discloses that the fabric, and therefore the coating, may have a conductivity of 10^6 to 10^9 Ω (column 5, lines 15-19).

Regarding claims 13-16, 24, 27-28, 31-36 and 40, Takagi discloses that one or more C-shaped grooves may run along a length of the monofilament such that a mechanical interlock forms between the monofilament and the conductive polymer filling the grooves such that the interlock reduces a need for adhesion of the conductive polymer to the monofilament (see Figure 1).

Regarding claims 15-16 and 35-36, the configuration taught by Takagi allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity and the positioning of the conductive polymer in the grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties (see Figure 1).

Regarding claim 19, Takagi discloses that the fabric may be single-layered or multi-layered (column 6, lines 8-14 and Figure 6).

Regarding claim 20, Takagi discloses that the fabric may comprise weft and warp filaments (woven fabric) (column 3, lines 53-64).

Regarding claims 21-22, Takagi does not specifically mention the claimed uses, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed.

Claim Rejections - 35 USC § 103

6. Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi as applied to claims 1-4, 7-8, 11-16, 19-22, 24, 27-28, 31-36 and 39-40 above, and further in view of USPN 4,803,096 to Kuhn et al. (hereinafter referred to as Kuhn).

Regarding claims 9-10, 23, 29-30 and 38, Takagi discloses that the conductive polymer may be mixture of a conductive powder with a polymer melt (column 5, lines 38-50), but Takagi does not specifically mention a polyaniline or polypyrrole. Kuhn discloses that it is known in the antistatic fabric art that conductive polymer fibers comprising a mixture of a conductive powder with a polymer may be substituted with polyaniline or polypyrrole conductive polymers to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers (see entire document including column 1, lines 6-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive polymer material from any suitable conductive polymer material, such as a polyaniline or polypyrrole, to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers and because it is within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claims 10 and 30, considering that Kuhn discloses that polyanilines and polypyrrole do not alter the physical properties of the fibers, and considering that the fiber taught by the prior art is substantially identical to the claimed fibers, it appears that the fibers would have physical properties comparable to a polyamide filament.

7. Claims 17 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi (as applied to claims 1-4, 7-8, 11-16, 19-22, 24, 27-28, 31-36 and 39-40 above).

Takagi discloses that the degree of surface area coverage of the conductive fiber is preferably 20 to 70% in consideration of processability, manufacturing costs, and conductivity (column 4, lines 40-51), but Takagi does not specifically mention weight percent of conductive polymer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the weight percent of conductive polymer, such as from 1 to 10%, because it is understood by one of ordinary skill in the art that the weight percent conductive polymer directly affects processability, manufacturing costs, and conductivity and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

8. Claims 1-4, 7-8, 11-17, 19-22, 24, 27-28, 31-37 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 6,093,491 to Dugan et al. (hereinafter referred to as Dugan).

Regarding claims 1-4, 7-8, 11-17, 19-22, 24, 27-28, 31-37 and 39-40, Takagi discloses a conductive fabric comprising a plurality of polymeric filaments having one or more C-shaped grooves formed therein, wherein each filament includes electrically conductive polymer material incorporated as a coating (see entire document including column 1, lines 6-10, column 3, lines 53-64, column 4, lines 8-21 and Figure 1). Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11), therefore, the fabric can at least be compared to a metal-based fabric in terms of conductivity. Considering that the fibers have a

core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to be resistant to dents and creases.

Regarding the fabric being an industrial fabric, Takagi may not specifically mention using the fabric in industrial applications, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed (see applicant's definition of "industrial fabric" on page 9 of the response filed on 9/16/2005). It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In the event that it is shown that Takagi does not teach or suggest lobed C-shaped monofilaments, Dugan clearly discloses that it is known in the art to use a lobed C-shaped monofilament to entrap material inside the polymer fiber for increased durability (see entire document including the Figures). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use lobed monofilaments, as taught by Dugan, because the lobed monofilaments increase durability partially encasing the material within the polymer fiber.

Regarding claim 2, Takagi discloses that the filaments may constitute between thirty and one hundred percent of the fabric (column 3, lines 34-39).

Regarding claims 3-4, considering that Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11) and that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to

have static dissipation properties equivalent to metal-based fabrics while also having physical properties (modulus, tenacity, strength, adhesion, abrasion resistance, and/or durability) comparable to non-conductive synthetic fabrics.

Regarding claims 7-8 and 27-28, Takagi discloses that the filament may have an oriented structure coated with conductive polymer material (column 4, lines 16-21 and Figure 1).

Regarding claims 8 and 28, Takagi discloses that the fibers may be formed by bicomponent spinning, but Takagi does not specifically mention the claimed method of applying conductive polymer. Considering that substantially identical structure illustrated in Figure 1 of Takagi compared to Figure 1 of the current application, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article.

Regarding claims 11-16, 31-36 and 39-40, Takagi discloses that the filament may be lobed monofilament coated with conductive polymer material (see Figure 1).

Regarding claims 12, 32 and 39-40, Takagi discloses that the fabric, and therefore the coating, may have a conductivity of 10^6 to 10^9 Ω (column 5, lines 15-19).

Regarding claims 13-16, 24, 27-28, 31-36 and 40, Takagi discloses that one or more C-shaped grooves may run along a length of the monofilament such that a mechanical interlock forms between the monofilament and the conductive polymer filling the grooves such that the interlock reduces a need for adhesion of the conductive polymer to the monofilament (see Figure 1).

Regarding claims 15-16 and 35-36, the configuration taught by Takagi allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity and the positioning of the conductive polymer in the

grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties (see Figure 1).

Regarding claims 17 and 37, Takagi discloses that the degree of surface area coverage of the conductive fiber is preferably 20 to 70% in consideration of processability, manufacturing costs, and conductivity (column 4, lines 40-51), but Takagi does not specifically mention weight percent of conductive polymer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the weight percent of conductive polymer, such as from 1 to 10%, because it is understood by one of ordinary skill in the art that the weight percent conductive polymer directly affects processability, manufacturing costs, and conductivity and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 19, Takagi discloses that the fabric may be single-layered or multi-layered (column 6, lines 8-14 and Figure 6).

Regarding claim 20, Takagi discloses that the fabric may comprise weft and warp filaments (woven fabric) (column 3, lines 53-64).

Regarding claims 21-22, Takagi does not specifically mention the claimed uses, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed.

9. Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 6,093,491 to Dugan as applied to claims 1-4, 7-8, 11-17, 19-22, 24, 27-28, 31-37 and 39-40 above, and further in view of USPN 4,803,096 to Kuhn.

Regarding claims 9-10, 23, 29-30 and 38, Takagi discloses that the conductive polymer may be mixture of a conductive powder with a polymer melt (column 5, lines 38-50), but Takagi does not specifically mention a polyaniline or polypyrrole. Kuhn discloses that it is known in the antistatic fabric art that conductive polymer fibers comprising a mixture of a conductive powder with a polymer may be substituted with polyaniline or polypyrrole conductive polymers to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers (see entire document including column 1, lines 6-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive polymer material from any suitable conductive polymer material, such as a polyaniline or polypyrrole, to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers and because it is within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claims 10 and 30, considering that Kuhn discloses that polyanilines and polypyrrole do not alter the physical properties of the fibers, and considering that the fiber taught by the prior art is substantially identical to the claimed fibers, it appears that the fibers would have physical properties comparable to a polyamide filament.

Response to Arguments

10. Applicant's arguments filed 9/16/2005 have been fully considered but they are not persuasive.

The applicant asserts that Takagi does not teach or suggest the claimed industrial fabric. The examiner respectfully disagrees. Takagi may not specifically mention using the fabric in industrial applications, but considering the substantially identical fabric taught by Takagi,

compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed. It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The applicant has failed to show, or attempt to show, that the fabric disclosed by the applied prior art is incapable of performing the intended use.

The applicant asserts that Takagi does not teach or suggest C-shaped grooves. The examiner respectfully disagrees. Takagi discloses that one or more C-shaped grooves may run along a length of the monofilament (see Figure 1). Although the applicant may be correct in asserting that the illustrated grooves resemble V or U shaped grooves more closely than C-shaped grooves, the grooves are still C-shaped (resemble a "C" shape). It is noted that although the current specification states that the grooves are C-shaped (see page 6, line 1), the grooves in Figure 1 of the current specification are not perfectly C-shaped. The grooves more closely resemble Ω-shaped grooves than C-shaped grooves. Yet, it is understood that the grooves resemble a "C" shape and thus are C-shaped. The claims are to be given their broadest most reasonable interpretation in view of the specification. The specification defines a C-shape as resembling a "C" shape.

The applicant asserts that Dugan does not teach or suggest the claimed C-shaped grooves because Dugan speaks of entrapping the hydrophilic material inside the molten polymer. The examiner respectfully disagrees. Regardless of the further teachings of Dugan, the reference clearly discloses that it is known in the art to use a lobed C-shaped monofilament to entrap

material inside the polymer fiber for increased durability (see entire document including the Figures). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use lobed monofilaments, as taught by Dugan, because the lobed monofilaments increase durability partially encasing the material within the polymer fiber.

The applicant asserts that there is no teaching of a coating because the grooves of Takagi are filled with fibers. The examiner respectfully disagrees. Regardless of the name used by Takago to describe the material located in the grooves, the material forms a discontinuous coating on the exterior of the fiber that is patently identical to the coating illustrated in Figure 1 of the current specification. It is noted that the current specification does not teach that the claimed "coating" is present on the exterior of the filaments beyond the grooves (see page 6, lines 1-15). To the contrary, Figure 1 shows that the claimed coating is a discontinuous coating because the figure does not illustrate the conductive polymer being present beyond the grooves.

Conclusion

11. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

10/6/05

ANDREW T. PIZIALI
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